AND PULITZER WENT BLIND
FOR WANT OF GOOD LIGHTING

Seitz, Don C.

HV1792
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AMERICAN PRINTING
HOUSE FOR THE BLIND

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# And Pulitzer Went Blind

## For want of good lighting

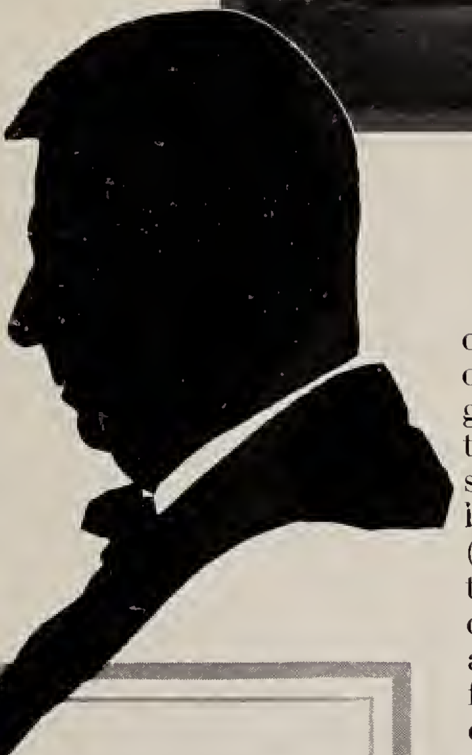
*He lived too soon to know the blessing modern lamps have brought to the newspaper men of today*

By Don C. Seitz
*Associate Editor and Director of The Outlook*

*The New York World Building at night as seen from City Hall Park*

Joseph Pulitzer, one of the greatest newspaper men who ever lived, once told me that he owed his blindness to straining his eyes writing and reading proofs under the miserable flicker of old-fashioned gas jets in St. Louis and New York, during the seventies and early eighties. Horatio W. Seymour, founder of the Chicago *Herald*, assured me that similar lights had burned off all his hair. This may have been true. I know that bald-headed editors were far more plentiful in the old days, than in these modern ones of electricity.

The arc light preceded the incandescent lamp in active service. The burning carbon spit and fumed, so that it was always too light or too dark for comfort in the composing rooms, where the new method of illumination came to have its value. The light would shift from dazzling brightness to a deep gloom, trimmed with a dying red. This was very hard on the eyes and annoyed the compositors. Replaced by the inferior incandescents of the old days before Mazda lamps, it was difficult to get a glow that would diffuse itself over sufficient territory. There were always dark spots that hurt the eyesight and made the handling of type difficult. Type, be it remembered, was then set by hand. It "pied" (*i. e.*, fell apart) with amazing ease. The results were troublesome. Save for diminishing heat, the incandescent of the eighties, and a great part of the nineties, was an aggravation that improved but little on the old-fashioned gas burners. It did, however, drive out the eccentric arc lights, and, placed over the compositor's case, helped him to find his letters. In the editorial rooms the desk lights made little yellow spots in the gloom under which men edited and wrote copy. The light was steadier than the old-time flames, but still lacked diffusion. Moreover, in most cases, it was badly installed. Wires wandered over the rooms like spider webs. They were insulated with silk, and ran through wooden coverings nailed to the ceiling. Plugs were poor and the light uncertain. Something of this was due to faulty generating machinery in the power houses. All the New York papers were then located along Park Row. Those lacking independent plants were fed from Gold Street Edison. The *World* generated its own current after 1890 for many years. So did the *Tribune*.



## Don C. Seitz, the man

*For twenty-five years Don C. Seitz helped to make the New York World great. Now he is a director and associate editor of the Outlook magazine. He has played a leading part in American journalism and made for himself an international reputation.*

*The eyes of Don C. Seitz have experienced the gloom and glare of many queer lights, and he hails with enthusiasm the brighter day that has dawned for the overworked eyes of his brothers who "compose" and print the news.*

In an effort to arrive at diffusion, reflectors were tried, and failed. Troughs full of lamps were suspended over makeup tables, but could not meet the needs. Mercury-vapor lamps were then tested for a time, but their light was also irregular, requiring a frequent shift to shake up the mercury, and failed of their purpose. Beside this, they

*ABOVE—This, it is rumored, is the main entrance to the well-lighted home of the Milwaukee Journal. The cheerful spirit of light, so abundant within, is carried out to the very latch string*

*RIGHT—And this, it is alleged, depicts the alert manner in which the Journal features its trim exterior—with floodlighting*

had the effect of making the printers look dead. The composing room seemed full of living corpses.

This strange result could not be endured, and the Cooper-Hewitts departed from offices where the printers were sensitive about appearances. It had now become possible, with the improvement in incandescents, to light the offices properly. Lamps of super-power were produced, by which it was possible to illuminate editorial rooms from ceiling installations, and at last secure the long-sought diffusion and do away with the spidery wires. Base plugs took care of desk lights where needed. The real triumph, however, lay in the lighting from overhead. The base plug also gave light to the keyboard of the linotype, a very important matter, as it was impossible to light an alley of machines properly from overhead. The same line and the same voltage supply power to the individual motor that runs the machine and melts the metal in its supply pot. Here, again, electricity drove out gas. The metal in gas days was very unevenly heated, and oxidized freely when exposed to the air to cool. Unpleasant and unhealthful gases were also thrown off, and there was an undue consumption of oxygen that vitiated the air. All this was remedied. It became unnecessary to fill the rooms with ventilating flues. While the blessed light came to the relief of tired eyes, the current took away the oppression from lungs and pores. An angel had visited the printer's devil.

### *The Inferno of the Past*

It is hard to conceive the strain upon night workers in the pre-electric days. Composing rooms, and the offices of the editors, looked like caves with here and there a will-o'-the-wisp dangling before their weary eyes. Gas, in warm weather, made cooling off impossible, and added horribly to the heat. The flame flickered so badly in the draft of an open window as to make seeing impossible. I think the "sweat shop" must have gotten its name from these days, when the tenement house tailors toiled over their work in shabby rooms under the oppressive flame illuminants. Certainly, composing and editorial rooms were sweat shops, all right.

In the press and stereotype rooms the arc light survived longer. There less is required of the eye. In time, however, incandescents became the rule, with good results in steadiness of light and economy.

Here, again, the newspaper offices gained over the gas period. Electric light might cost more by the metered rate, but (1) it gave much greater light, and (2) it was much easier to turn off and on. Great losses came from the bother of lighting gas. As a result, jets were allowed to flow to serve convenience and avoid the trouble of using matches. This might seem a small matter. It is not. Beside the factor of safety, the time lost in matchscratching was no trifling item when applied to many men.

"The frame is dark" was the colloquial way of describing the demise or discharge of a typesetter. This meant that his gas jet had been finally turned off.

The ill effect of the flickering flame upon the eyes has been mentioned. It was very great. Straining to see, the eyeballs became tired; their delicate lenses dull; and their nerves exhausted. So men were early reduced to glasses, and soon became inefficient. Heavy green shades were worn as a form of relief and protection, but did about as much harm as good.

This eye strain affected the tempers of the old-time printers and made them a surly, disagreeable lot. The discomfort of night work led to the liberal consumption of coffee in efforts to keep awake, and of whiskey to muster energies. Both remedies were worse than the disease. No occupation was responsible for so much breakdown and misery as the trade of printer when practiced at night. The hours were unduly long, as it was necessary to work half an afternoon without reward to fill the cases with type. This done, the printer adjourned to some saloon or coffee house to brace up for the long night, which gas jets refused to turn into day.

### *Now Twenty-four Hours of Sunshine*

The incandescent lamp has changed all this, coupled with the coming of the Mergenthaler (linotype machine). Day and night work do not have to be linked together in unwholesome order. The working hours are definite and reasonable. Pay is not by the piece, but on a scale that insures good and regular compensation. Once among the most poorly paid of skilled employments, it is about the best. Thanks to good light, many men find night work highly agreeable, giving, as it does, a considerable portion of the day for recreation. The twenty-four hours are now divided into eight for work, eight for sleep and eight to be used at pleasure. This is civilized and Christian. As a result, the printer is no longer a sot or a vagabond. His character has undergone a remarkable change. Few are improvident and few are out of work. The treasuries of the unions are full, and drifting has ceased to be a characteristic of the trade.

This has been possible by reason of the improved mechanical aids, in all of which electricity performs the most important part, helping to standardize work, ensure steadiness of employment, and with it, proper pay.

Just as modern light has cleaned the slums of the cities and helped public morals and public safety, so it has brought about great industrial reforms, and in no place has it accomplished more than in the great newspaper offices. Newspapers date their progress from "what hath God wrought" transmitted by telegraph from Washington to Baltimore on May 24, 1844. It took another leap forward with the laying of the second Atlantic cable, but its real growth and success came with the coming of better light.

Steadiness of light, it may be remarked, is a great factor in preserving eyesight. I recall the eminent oculist, Dr. August Pagenstecher of Wiesbaden, Germany, advising Mr. Pulitzer that one should never read in a train or under any condition of vibrations. To do so is seriously to imperil sight. The American habit of reading on jiggly railway trains provides a deal of work for the spectacle makers. Sight, then, should be the longest lived of the faculties, for *its possession is the most precious.* That it is unduly tampered with is an all too certain fact. Some eye doctors live by adding glasses too readily to the store of human embarrassments. At the least abuse, artificial aid is sought. The eye takes to idleness as easily as arms and legs. Dr. Oliver Wendell Holmes, who, beside being a poet, was an eminent anatomist, used to tell a story about an octogenarian acquaintance who became sick of "specs" and determined that his eyes must work. Accordingly, he threw away his pince-nez and saw perfectly as long as he lived.

With some folks, glasses are an affectation of intellectuality. I like the story of the little Boston boy who seemed unduly exalted! His mother explained it:

"Cabot is wearing his first pair of glasses," she observed proudly.

So, the modern light, beyond the benefits it has brought to newspaperdom, has given widespread surcease to the eyes of the world, across which it is yet on its travels to the farthest corners of the earth.

It might be added that eye strain brings on the most trying of nervous disorders. It is in many cases the parent of the headache, and certainly the chief foundation of irritation. The nerves of the eye are naturally the most sensitive in the system. Those of the stomach are tarred rope in comparison. Cross mothers, cross typists and cross men can commonly be accounted for from abuse of the eyesight.

So the steady little incandescent lamp has a therapeutic value that must be added to its other credits. The patent electric belt venders used to proclaim "electricity is life." The "belts" may not have contained any, but the statement was correct.

### *A Light That Has Never Failed*

When in 1908 the great home of *The World*, at the corner of Park Row and Frankfort Street in New York was doubled in size, its self-creating electrical plant was thrown out and current from the New York Edison Company installed. This was the first large private light and power contract made by the company, and remains among the greatest. Mr. Joseph Pulitzer,

*Turn to page 37*

*Aided by some 25 foot candles in the Milwaukee Journal's composing room, these men whip raw copy into page form with amazing dispatch*

*Even King Arthur would envy this city editor and his round table where knights of the pencil sharpen their noses for news—with light*

# Illumination Economics—in Germany

## *American methods of lighting education applied in Germany —an article written for the Berliner Tageblatt*

By J. E. Rosenthal
*Chief Engineer, Illuminating Economics Department,*
*Osram Company, Ltd., Berlin*

Thanks to the cordial welcome extended to them in the United States of America many German travellers have ventured across the "big pond" lately to study American methods. Not all of these seekers of information, however, have been able to grasp the spirit behind those methods and, as a result, there have been few qualified to interpret correctly the industrial and economic wonders which were so liberally spread out before their eyes. Many were so bewildered by the powerful impressions they received that they could only render a blurred account of what they had seen and been told. They had seen only the face of things, but failed to discover the soul behind it; and some seemed to doubt whether there was any soul at all.

It has been my good fortune to have spent many years of my youth in America. So, when I was sent there recently as member of an international commission to study the latest developments in the field of Illuminating Engineering, I took great care to find out, not only what was being done, but also why it was done. The organization of the Department of Illuminating Economics of which I am in charge, is partly the outcome of these studies.

### *Contrasting German and American Methods*

The essential difference between German and American business methods, as I see it, is that the German manufacturer as a rule loses interest in his product after it has been bought and paid for. He will spend large sums of money and much pain and trouble to develop his product to perfection and in this way he thinks he has done his duty by his customers; but he takes no further interest in his product after it has left his hands, unless his customer has been wise enough to retain a portion of the purchase price by way of guarantee. Not so the American manufacturer; he not only spends money to develop a perfect product but he also sees to it that it gives best service to his customers. He instructs his customer in the use of his product; he lectures him how to prevent any abuse; he advises him in case of trouble and, last not least, he points out ever new applications of his product, thus stimulating and widening the market. All this he calls "Goodwill Advertising." Goodwill is a remarkable word, for which we have no synonym in the German language. When a German offers his business for sale, he thinks of selling his office furniture, his typewriters, or his machine tools; the American sells his goodwill, namely the confidence of his customers in the absolute reliability and trustworthiness of his product and his business dealings which may have taken a generation or longer to build up.

In no other branch of the industry are these methods as conspicuous as in the electric lamp business which it has been my privilege to study principally. It was an astounding fact that in Germany the demand for electric lamps about a year ago amounted to little over half a lamp *per capita* against over three lamps *per capita* in the United States. How has this tremendous and still increasing demand arisen? Had it developed spontaneously or has there been an organized effort to stimulate it?

There are two large Lighting Institutions in America, one at Nela Park, Cleveland, the other at Harrison, N. J., besides many smaller ones in other parts of the country. They consist of a group of buildings containing research laboratories of pure and applied science, trial factories, lecture theatres, and exhibitions, all with the object of making the best lamp possible for the ultimate consumer and of teaching the public how to use this lamp to the best advantage. In this vast scheme of instruction the written or spoken word is of secondary importance, but demonstrations of an incredible convincingness have been developed according to the slogan: *Seeing is believing!* The nature of vision is resolved into its different phases and for every phase a plausible demonstration has been found showing the mistakes which are commonly made in the application of light, and how these mistakes should be avoided. An enormous amount of statistical data has been compiled illustrating how improved vision will benefit every branch of the economic life of a nation. These data refer to the relation between illumination and safety; illumination and production in factories; illumination and attractive power of show windows and advertisements; illumination and comfort in the home, and so forth. Thus illumination is made an every-day topic for discussion in learned societies, Rotary Clubs, and the press. Every child in America knows that the worst fault of modern illuminants is glare, and how to avoid it.

Bare glaring lamps are very rare in America except for display lighting and advertising. Shops, offices, factories, theatres, schools, and public buildings are beautifully lighted. Streets in the evening are turned into so-called White Ways which are lighted to almost daylight intensity. The display lighting in parks and exhibitions is too marvelous to describe. The stimulating effect of so much light on the entire economic life is extraordinary. The dullest part of a town may be converted into a thriving business center simply by lighting the streets and shops properly. But also the direct business accruing from the sale of all these electric lamps is enormous. It must be remembered that the lamp itself is only a small portion of this business, namely about five per cent. For every lamp sold central stations, electric manufacturers, and wiring contractors turn over twenty times the value of the lamp. Thus the increased demand for electric lamps in America amounting to roughly 100 million dollars results in an increased business to the electrical industry generally of about 2000 million dollars. These are staggering figures! And this is the secret of the astounding American success: the systematic development of the home market—the careful nursing of the purchasing power of her own people! The winning of the war has little to do with American prosperity. Had there been no war, America would today be just as prosperous, perhaps even more so. Mr. Hoover, Mr. Owen D. Young, Mr. S. E. Doane, and other clear-headed economists, business men, and engineers have done more to make America prosperous than military leaders.

I am conscious of the fact that in this respect my views

*With these types of reflectors the mounting height should be increased by a few inches, or a ⅞-inch socket extension used when the new inside-frosted lamp is installed*

and the border becomes a part of the picture rather than an after-thought.

### *The Lighting of Poster and Bulletin Boards*

The largest of the new lamps now available is of the 100-watt size. It is generally recognized that in the more important districts where poster and bulletin boards abound, higher wattages should be used. However, in the darker districts or where the circulation is relatively low, many boards are lighted with angle reflectors and 100-watt lamps. Therefore the operation of the new lamp in angle reflectors is important to outdoor advertisers. It is well adapted to this service.

It will be noted that the bulb of the new 100-watt lamp is considerably smaller than that of the old PS-25 Mazda C clear lamp that it replaces. The diameter has been reduced, and the filament is considerably closer to the base of the lamp. However, in spite of this shortening of light center length, the new lamp may directly replace the clear lamp in certain types of angle reflectors (as shown on page 36). In other types of reflectors (as are shown above), the inside-frosted lamp may directly replace the clear lamp if the reflectors are mounted a few inches higher above the edge of the board. This is to prevent the cut-off, or edge of the dark or shaded area, from intercepting the top of the board. On existing boards, if it is impracticable to change the mounting height, a ⅞-inch socket extension should be used when the new inside-frosted lamp is installed. These extensions have been made available by lamp manufacturers at low cost.

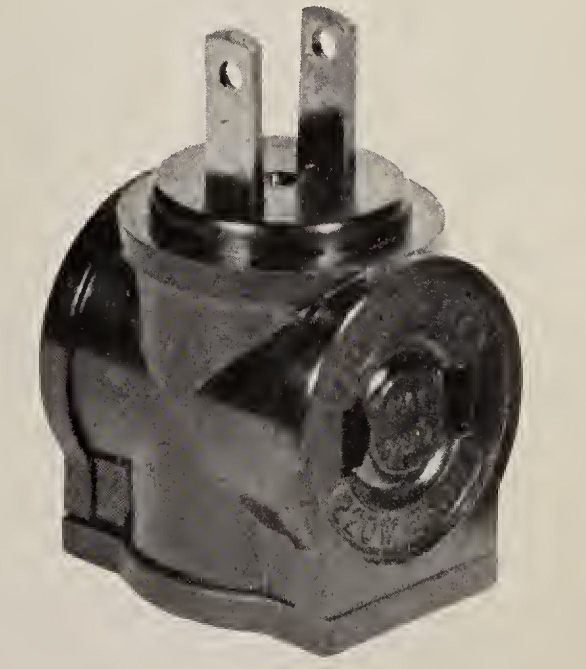
# And Pulitzer Went Blind

*Continued from page 13*

owner of the paper, had not been apprised of the change. He was much alarmed when informed of the fact, and forbade the removal of the plant. It had been disconnected and all of the boilers save those needed for heating, removed. This fact, however, was not communicated to him, but the engines were allowed to remain for eighteen months, when they were sold for junk—also without his knowledge. Mr. Pulitzer's proposition came from the fear that the paper would be put at the mercy of the corporation and could not help itself. He never would permit the paper to be trammelled. In this case he was wrong.

No light has ever gone out on the constellation that shines every night from the golden dome, over the desk of any editor or frame of any compositor through the fault of the Edison current. Nor has a press or linotype ever stood still. They often did in the old private plant days. Then something was always happening. Five lines lead into the Pulitzer Building. It is even hooked up with the Brooklyn Edison across the East River. I do not recall that it has ever been necessary to switch on any of the reserve lines. They never break down!

Convenience is the true token of Civilization. This the current supplies. Of all conveniences, Light is the one most important for human welfare. "All men are cowards in the dark," said a famous French general. So Light gives courage, extends the useful hours, adds to pleasure, conserves health and eyesight and keeps the thieves away. What more could be asked of the incandescent bulb, with its tiny thread of fire, or the dynamos thundering away in the distant power house, snatching the lightning from the heavens and making it the reliable and mighty servant of man?



**A New "Three-in-One" Convenience Outlet**

*The particularly well-designed convenience tap shown in the accompanying illustration will increase the usefulness of the electrical service in any home. When attached to the ordinary light socket it provides three convenience outlets to which may be attached a variety of electric lamps and appliances. Moreover, by removing one small bolt the threads of the upper portion of the device can be removed, thereby exposing two prongs which may be fitted into the usual type of convenience outlet. Here again a single outlet is replaced by three.*

Great imaginings come true. The deeds of the genii in the Arabian Nights are oft duplicated. The magic carpet flies, speech is heard around the world, Sinbad's roc is duplicated in the airplane and man is master of the world and sky.

Yet greater days will come. I believe the time is not far distant when power will be sent without wires, when motor cars will pick up propulsive force as they travel, from harnessed waters, winds and tides, and Light will radiate at night as from the sun by day!

The germ of Simplified Practice is spreading rapidly to all corners. The American Zinc Institute, Inc., the Congress of International Accountants, the British boot and shoe trades, the National Canners Association and many other institutions are adopting simplification as a means of economy in their fields.

# This Auto Lamp Guide Lists the Needs of Sixty Cars

*THIS 1926 Auto Lamp Guide, compiled by the National Lamp Works' Engineering Department and distributed by the thousands, lists sixty makes of cars. For the Mazda Auto Lamp dealer it should prove very valuable in determining quickly and correctly the proper lamp for the job. Twelve models are listed with depressible beam equipment and fifty-eight models list stop lights as standard equipment.*

## 19 ● 26

## NATIONAL MAZDA AUTO LAMP GUIDE

| MAZDA Lamp Number | BASE | VOLTS | CANDLE POWER | LIST PRICE CLEAR |
|---|---|---|---|---|
| 61 | S. C. | 3-4 | 2 | $0.20 |
| 62 | D. C. | | | |
| 63 | S. C. | 6-8 | 3 | .18 |
| 64 | D. C. | | | |
| 67 | S. C. | 12-16 | 3 | .22 |
| 68 | D. C. | | | |
| 71 | S. C. | 18-24 | 3 | .30 |
| 72 | D. C. | | | |
| 81 | S. C. | 6-8 | 6 | .22 |
| 82 | D. C. | | | |
| 87 | S. C. | 6-8 | 12 | .25 |
| 88 | D. C. | | | |
| 89 | S. C. | 12-16 | 6 | .30 |
| 90 | D. C. | | | |
| 1110 | D. C. | 6-8 | 21-21 two filaments | .45 |
| 1129 | S. C. | 6-8 | 21 | .35 |
| 1130 | D. C. | | | |
| 1133 | S. C. | 6-8 | 32 | .55 |
| 1134 | D. C. | | | |
| 1138 | D. C. | 9 | 27 | .40 |
| 1141 | S. C. | 12-16 | 21 | .40 |
| 1142 | D. C. | | | |
| 1143 | S. C. | 12-16 | 32 | .60 |
| 1144 | D. C. | | | |
| 1158 | D. C. | 6-8 | 21-2 two filaments | .40 |
| 1160 | D. C. | 9 | 21 | .35 |

Prices of lamps 1129, 1130, 1133, 1134, 1141, 1142, 1158, 1160 with blue bulb 10 cents additional. 1143, 1144 with blue bulb 15 cents additional.
Lamps listed in bold type are in greater demand than remaining lamps.

| CAR | YEAR | MAZDA LAMP NUMBERS | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Head | Aux. Head | Side | Rear | Inst. | Dome | Stop |
| Ajax | '25, '26 | 1129 | | 63 | 63 | 63 | 81 | |
| Apperson | '22, '25 | 1129 | | 63 | 63 | 63a | 81 | |
| Apperson | '23, '24, '26 | 1129 | | 63 | 63 | 63 | 82 | |
| Auburn | '22 | 1129 | 63 | | 63 | 64 | | |
| Auburn | '23, '24 | 1129 | 81 | 63 | 63 | 64 | 82 | |
| Auburn | '26 | 1158 | | | 63 | 63 | 81 | 87 |
| Buick | '22, '23, '24, '25 | 1129 | | 63 | 63 | 63 | 81 | |
| Buick | '26 Late '25 | 1110 | | 63 | 63 | 63 | 81 | |
| Cadillac | '22, '23, '24, '25 | 1129 | | 63 | 61 | 61 | 81 | 1129 |
| Cadillac | '26 Late '25 | 1110 | 63 | | 63 | 63 | 63 | 1129 |
| Case | '22, '23, '24 | 1129 | 81 | 63 | 63 | 63b | 64 | 1129 |
| Case | '25, '26 | 1129 | | 63 | 63 | 63 | 81 | 1129 |
| Chalmers | '22, '23 | 1129 | 63 | 63 | 63 | 63 | 81 | |
| Chandler | All | 1129 | 81 | 63 | 63 | 63 | 81 | |
| Chevrolet | '23, '24 | 1129 | | | 63 | 63 | 64 | |
| Chevrolet | '22, '25, '26 | 1129 | | 63 | 63 | 63 | 63 | |
| Chrysler | '24, '25, '26 | 1129 | | 63 | 63 | 63 | 63 | 1129 |
| Chrysler | '26 (Imperial) | 1110 | | 63 | 63 | 63 | 63 | 1129 |
| Cleveland | '22, '23 | 1129 | | 63 | 63 | 63 | 82 | |
| Cleveland | '24, '25, '26 | 1129 | | 63 | 63 | 63 | 63 | |
| Cole | '22, '23, '24 | 1129 | 81 | | 63 | 63c | 82 | |
| Columbia | '22, '23, '24 | 1129 | 81 | 63 | 63 | 64 | 82 | |
| Cunningham | '22 | 1129 | | 64 | 64 | 63 | 82 | |
| Cunningham | '23 | 1129 | 81 | | 63 | 63 | 82 | |
| Cunningham | '25, '26 | 1129 | | 81 | 63 | 63 | 82 | 1129 |
| Davis | '22 | 1129 | 63 | | 63 | 63 | 82 | |
| Davis | '24, '25 | 1129 | 81 | 63 | 63 | 64 | 82 | 1130 |
| Davis | '26 | 1110 | | 63 | 63 | 64 | | |
| Diana | '25, '26 | 1129 | | 63 | 63 | 63 | 64 | |
| Dodge | All | 1141 | | 67 | 67 | 67 | 89 | 1141 |
| Dort | '22, '23, '24 | 1129 | | 63 | 63 | 63 | 63 | |
| Duesenberg | All | 1129 | 81 | | 63 | 63 | 81 | 1129 |
| Durant | All | 1129 | | 63 | 63 | 64d | 81e | |
| Elcar | '22, '23 | 1129 | 81 | 63 | 63 | 64 | 81 | |
| Elcar | '24 | 1129 | 81 | 63 | 63 | 63 | 81 | |
| Elcar | '25 | 1129 | 81 | 63 | 63 | 64 | 82 | 1129 |
| Elcar | '26 (Model 881) | 1110 | 63 | | 63 | 64 | 82 | 1129 |
| Elcar | '26 (Others) | 1129 | 81 | | 63 | 64 | 82 | 1129 |
| Elgin | '22, '23, '24 | 1129 | 81 | 63 | 63 | 63 | 82 | 1129 |
| Essex | '22 | 1129 | | 63 | 63 | 63 | 81 | |
| Essex | '23, '24, '25, '26 | 1129 | | 63 | 61 | 61 | | |
| Flint | '24, '25, '26 | 1129 | | 63 | 63 | 63 | 63f | 1129 |
| Ford | All with starter | 1158 | | | 63 | 63 | 63 | |
| Ford | All without starter | 1130 | | | | | | |
| Franklin | '22 | 1142 | 90 | | 64 | 64 | 90 | |
| Franklin | '23, '24, '25, '26 | 1129 | 81 | | 61 | 61 | 81 | 1129 |
| Gardner | '22, '26 | 1129 | | 63 | 63 | 63 | 82 | 1129 |
| Gardner | '23, '24, '25 | 1129 | | 63 | 63 | 63 | 63 | |
| Gray | '23, '24, '25 | 1129 | | | 63 | 63 | 64 | 1129 |
| Haynes | '22, '23, '24 | 1129 | 81 | 63 | 63 | 63 | 81 | 1129 |
| Hudson | '22 | 1129 | | 63 | 63 | 63 | 81 | |
| Hudson | '23, '24, '25, '26 | 1129 | | 63 | 61 | 61 | 63 | |
| Hupmobile | All | 1129 | | 63 | 63 | 63 | 63 | 1129 |
| Jewett | '23 | 1129 | 63 | | 63 | 63 | 82 | |
| Jewett | '24, '25 | 1129 | 81 | 63 | 63 | 64 | 81 | 1129 |
| Jewett | '26 | 1129 | | 63 | 63 | 64 | 64 | 1129 |
| Jordan | All | 1129 | 81 | | 63 | 63 | 81 | 1129 |
| Kissel | All | 1129 | 81 | 63 | 63 | 64 | 82 | 1129 |
| Lexington | '22, '23 | 1129 | | 63 | 63 | 64 | 82 | |
| Lincoln | '22, '23, '24, '25 | 1129 | | 81 | 61 | 61 | 81 | 1129 |
| Lincoln | '26 | 1158 | | | 61 | 61 | 81 | 1129 |
| Locomobile | '22, '26 | 1129 | 81 | 63 | 63 | 63 | 63 | 1129 |
| Locomobile | '23, '24, '25 | 1141 | 67 | | 67 | 67 | 89 | 1141 |
| Marmon | All | 1129 | 81 | 81 | 63 | 63 | 82 | 1129 |
| Maxwell | '23, '24, '25 | 1129 | | 63 | 63 | 63 | 63 | 1129 |
| Moon | '22, '23, '24, '25 | 1129 | 81 | 63 | 63 | 63 | 63 | |
| Moon | '26 | 1129 | | 63 | 63 | 63 | 64 | |
| Nash | '22, '23, '24 | 1129 | 81 | 63 | 63 | 63 | 82 | 1129 |
| Nash | '25, '26 | 1129 | | 63 | 63 | 63 | 81 | 1129 |
| Oakland | '22 | 1129 | 63 | | 63 | 63 | 82 | |
| Oakland | '23, '24, '25, '26 | 1129 | | 63 | 63 | 63 | 63 | |
| Oldsmobile | '22 | 1129 | 63 | | 63 | 64 | 82 | |
| Oldsmobile | '23 | 1129 | 81 | 63 | 63 | 63 | 82 | |
| Oldsmobile | '24, '25, '26 | 1129 | | 63 | 63 | 63 | 81 | |
| Overland | '22, '23, '24, '25 | 1129 | | | 61 | 61 | 81 | |
| Overland | '26 | 1129 | | | 61 | 61 | | |
| Packard | '22, '23, '24, '25 (Six) | 1129 | 81 | 63 | 63 | 63 | 81 | 1129 |
| Packard | '26 (Six) | 1110 | 63 | | 63 | 63 | 81 | 1129 |
| Packard | '24, '25, '26 (Eight) | 1129 | 1158 | 63 | 63 | 63 | 81 | 1129 |
| Paige | '22, '23 | 1129 | 81 | 63 | 63 | 64 | 81 | 1129 |
| Paige | '24, '25 | 1129 | 81 | 63 | 63 | 81 | 81 | 1129 |
| Paige | '26 | 1129 | | 63 | 63 | 64 | 64 | 1129 |
| Peerless | '23, '24<br>Model 66–'25<br>Model 67–'26 | 1129 | 63 | | 61 | 61 | 81 | 1129 |
| Peerless | '22<br>Model 70–'25<br>Model 72–'26 | 1129 | 81 | 63 | 63 | 63 | 81 | 1129 |
| Peerless | '26 (Eight) | 1110 | | 63 | 63 | 63 | 81 | 1129 |
| Pierce Arrow | All | 1129 | 81 | | 81 | 63 | 81 | 1129 |
| Pontiac | '26 | 1129 | | 63 | 63 | 63 | 63 | |
| Reo | '22, '23, '24, '25 | 1129 | | 63 | 63 | 63 | 63 | |
| Reo | '26 | 1110 | | 63 | 63 | 63 | 63 | |
| Rickenhacker | '23, '24 | 1129 | 81 | 63 | 63 | 63 | | |
| Rickenbacker | '25 | 1158 | | 63 | 63 | 63 | 63 | 1129 |
| Rickenbacker | '26 | 1110 | | 63 | 63 | 63 | 81 | 1129 |
| Rollin | '24, '25, '26 | 1129 | | | 63 | 63 | 63 | 1129 |
| Rolls Royce | '22, '23, '24 | 1142 | | 90 | 68 | 68 | | |
| Rolls Royce | '25 | 1130 | | 82 | 64 | 64 | | |
| Rolls Royce | '26 | 1129 | | 63 | 63 | 63 | | 1129 |
| Star | All | 1129 | | 63 | 63 | 64 | 81e | |
| Stearns Knight | All | 1141 | 89 | 67 | 67 | 67 | 89 | 1141 |
| Sterling Knight | '25 | 1141 | 89 | | 67 | 67 | 90 | 1141 |
| Studebaker | '22, '23, '24, '25 | 1129 | | 63 | 63 | 63 | 81 | 87 |
| Studebaker | '26 | 1110 | | 63 | 63 | 63 | 81 | 87 |
| Stutz | '22, '23, '24, '25 | 1129 | 81 | 63 | 63 | 63 | 81 | 1129 |
| Stutz | '26 | 1110 | | 81 | 63 | 63 | 1130 | 1129 |
| Velie | '22, '23, '24, '25 | 1129 | 81 | 63 | 63 | 63 | 82l | 87 |
| Velie | '26 | 1129 | | 63 | 63 | 63 | 64 | 87 |
| Westcott | '22 | 1129 | 63 | | 61 | 61 | 81 | |
| Westcott | '23, '24, '25 | 1129 | 81 | 63m | 61 | 62 | 82 | |
| Willys Knight | '22, '23, '24, '25 | 1129 | 63 | 63 | 61 | 61 | 81 | |
| Willys Knight | '26 (Model 70) | 1110 | | 63 | 63 | 63 | 81 | 1129 |
| Willys Knight | '26 (Model 66) | 1129 | 1129* | 63 | 63 | 63 | 81 | 1129 |
| Wills-Sainte Claire | All | 1129 | 63 | | 63 | 63 | 81 | 1129 |

a—64 on 1922 closed models  b—64 on 1924 models and 1923 model X  c—64 on 1922 models  d—63 on 1924 closed 4-cylinder
e—82 on 1923 models  f—64 on 1924 models  l—81 on 1925 models  m—64 on 1924 model C-44  *—Auxiliary driving light

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